REMARKS

Claims 1-50 are pending in the subject application, and all the claims stand rejected. By this Amendment, claims 1-9, 13, 14, 15, 17, 20-26, 28, 29, 32, 39-41, 46-48 and 50 have been amended. The remaining claims have not been amended. Favorable reconsideration of the application and allowance of all of the pending claims are respectfully requested in view of the above amendments and the following remarks.

The amendments to independent claims 1, 20, 39 and 46 are to clarify that the measure of variation is made among contiguous values in each of the subsets. It is believed that the original independent claims were patentable over the prior art of record, but these amendments better state what is intended by the original claim language.

The Rejections

1. Claims 1-8, 13, 15, 20-27, 32, 34, 39-43 and 46-50 stand rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,625,569 to James et al. ("James").

2. Claims 9-12, 14, 28-31 and 33 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over James in view of U.S. Patent No. 4,845,500 to Cornett et al. ("Cornett")

3. Claims 16, 35 and 44 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over James in view of U.S. Publication No. 2002/0138210 to Wilkes et al. ("Wilkes")

4. Claims 17-19, 36-38 and 45 stand rejected 35 U.S.C. § 103(a) as being unpatentable over James in view of U.S. Publication No. 2003/0171896 to Rao et al. ("Rao").

Arguments

The subject matter of the claims pertains to analyzing a set of values that may represent measured physical phenomena or events. A plurality of subsets of contiguous values is defined within the set of values. Next, for each subset of values, a measure of variation is determined. That is, each of the values in a subset is compared with other values in that same subset. This is

performed for each subset. The set of values is then categorized or characterized based on the measures of variation for the plurality of subsets. One application of this technique is to use the measures of variation to determine whether the set of values is homoscedastic or heteroscedastic.

The Office Action relies on James as the primary reference. It is respectfully submitted that James is not at all relevant to the claimed subject matter. Independent claims 1, 20, 39 and 46 have been amended to clarify that a measure of variation is determined among the contiguous values in each of the plurality of subsets. There is a measure of variation for each subset that indicates the degree of variation among the contiguous values for the corresponding subset.

By contrast, James relates to a real-time coherence estimation system for assessing "health" of a system by analyzing multiple time-correlated signals representing activity in a system. James makes no teaching or suggestion of comparing against each other values in each of a plurality of subsets of contiguous values that are defined from a set of contiguous values.

At column 15, lines 17-20, James generically describes a continuously valued signal as a signal that is a combination of itself, other signals, environment, and noise. Moreover, James describes that each value of this signal is at a definite point in time as defined by i. This is simply a generic development of the concept of a time-based signal that is a complex function of many interacting variables. James does not describe a windowing module that produces a plurality of subsets of data from a set of data or values. James simply and generically defines how one would compute the value of the signal of interest given knowledge of the other parameters.

In addition, at column 11, lines 56-68 and column 12, lines 1-17, James describes that continuous time series data is passed through a parameter estimator. Coefficients are computed in this manner, using the multi-sensor signals at a fixed instant of time. James describes that further analysis is performed on the residual using a non-linear neural classifier as well as noise analysis techniques. According to James, the weights of the neural network and noise characteristics are computed and compared with nominal weights stored in a database. James also describes that information from a parameter estimator, the nonlinear classifier and the noise

analysis modules may be aggregated to classify an anomaly before sending fault information on to the next module. These aspects described by James have no relevancy to the concept of defining a plurality of subsets of contiguous values within a set of values, determining a measure of variation among contiguous values in each subset, and categorizing the set of values based on the measures of variation for the plurality of subsets.

For these reasons, the rejection of independent claims 1, 20, 39 and 46 should be withdrawn.

The following comments are provided with respect to the subject matter of certain dependent claims notwithstanding the fact that the dependent claims should be allowable because they depend on allowable independent claims.

While James refers to communication applications at column 3, lines 11-23 and column 5, lines 27-31, James does not describe that the set of values on which the analysis is consists of characteristics or parameters of a communication signal. Nor does James describe at column 13, lines 41-49 that the residual values are the result of numerical analysis of a communication signal. Therefore, the rejection of claims 3, 6, 7, 22, 25 and 26 should be withdrawn.

At column 30, lines 17-36, James describes anomaly detection in a perfect world and proposes comparing a residual to a model residual and comparing the difference to a threshold. Again, this is totally different from computing a residual and doing further statistical processing on the residual itself. Moreover, this paragraph does not mention characterizing a set of values as heterocedastic or homoscedastic. Therefore, the rejection of claims 8, 27, 42 and 49 should be withdrawn.

At column 11, lines 46-63, James describes saving sensor values over time, and feeding them into the parameter estimator to determine system health at any given point. This is significantly different from storing the determined measure of variations for each of the subsets of contiguous values as recited in claims 13 and 32.

With regard to claims 15, 34, 43 and 50, the Office Action refers to column 22, lines 11-31 of James. There, James describes comparing predicted data with a real sensor data to

determine a measure of sensor performance. By contrast, claims 1, 34, 43 and 50 relate to categorizing the set of values based on a difference between the measure of variation determined for one of the subsets and a measure of variation determined for another of the subsets.

The Office Action rejects the remaining claims under 35 U.S.C. § 103(a) as being unpatentable over James in combination with one of Cornett, Wilkes and Rao.

The Office Action applies Cornett, in combination with James, to claims 9-12, 14, 28-31 and 33. Cornett, at column 2, lines 32-49 and 60-64, describes a radar video detector and target tracking apparatus. In particular, Cornett describes tracking multiple targets on a given bearing and reducing target swapping by, among other things, adjusting the window size (number of sectors or regions) according to the size of the target being tracked. On the other hand, these dependent claims pertain to defining a subset of contiguous values wherein a range of values for the subset is no greater than the number of values within the set of values. Then, subsets are defined by varying the position of the range with respect to the set of values and/or varying the size of the range. Cornett's teaching has nothing to do with setting a range used to define subsets of contiguous values that are individually analyzed for variations to determine a measure of variation for each subset.

The Office Action applies Wilkes, in combination with James, to claims 16, 35 and 44. While Wilkes describes principal component analysis in connection with a microbial identification apparatus, combining it with James does not teach or suggest the concept of categorizing a set of values by performing n-way principal component analysis of the measures of variation determined for the plurality of subsets of contiguous values.

The Office Action applies Rao, in combination with James, to claims 17-19, 36-38 and 45. Rao discloses a method for graphical evaluation of IDDQ measurements related to defects in an integrated circuit. In particular, the Office Action points to FIGs. 4, 6, 8 and 10-21 of Rao as allegedly teaching visual analysis of a plot of measures of variation for a plurality of subsets. However, Rao merely teaching plots of various parameters measured from an integrated circuit

for defect analysis. Rao does not teach plotting measures of variation determined for a plurality of subsets of contiguous data from a set of data in order to categorize the set of data.

In view of the foregoing, Applicant respectfully requests the Examiner to find the application to be in condition for allowance with claims 1 - 50. However, if for any reason the Examiner feels that the application is not now in condition for allowance, he is respectfully requested to call the undersigned attorney to discuss any unresolved issues and to expedite the disposition of the application.

Respectfully submitted,

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